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TITLE: FLATTENING OF PHOSPHOSILICATE GLASS FILM

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INVENTOR-INFORMATION:

NAME

MATSUMURA, TAKASHI

TAKEBAYASHI, TAKAMICHI

ASSIGNEE-INFORMATION:

NAME

COUNTRY

MATSUSHITA ELECTRONICS CORP

N/A

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ABSTRACT:

PURPOSE: To shorten a channel and to flatten a phosphosilicate glass film by a method wherein PSG is heat-treated in a steam atmosphere.

CONSTITUTION: A P-type region 1 and a fixed oxide film for element isolation are formed, a polycrystalline silicon film 4 to be used as a gate electrode is formed, and the respective impurity diffusion layer 8, 9 of an N-type and a P-type are formed by the ion implantation method using a photo resist as a

mask. Then a thermal oxide film 5 is grown for 30min at 900°C in an oxygen atmosphere, and a silicon nitride layer 6 is adhered at 40nm thickness. PSG 7 of 8mol% of phosphorus concentration is adhered on the upper part thereof, and flowing of PSG is performed for 90min at 900°C in a steam atmosphere having 1.8 of the rate of hydrogen to oxygen, for example, in atmospheric pressure. Etching for contact holes is performed using the photo resist thereof as a mask, and Al wirings are formed finally to complete a complementary MOS semiconductor device.

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(72)Inventor : MATSUMURA TAKASHI

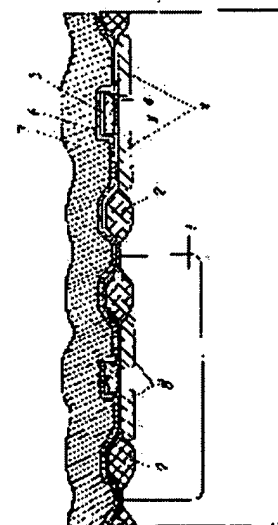
TAKEBAYASHI TAKAMICHI

(54) FLATTENING OF PHOSPHOSILICATE GLASS FILM

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